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Telecom systems for small businesses have a bright future in Europe

The convergence of communications and computer technology, the efficiency telecommunications offers modern businesses and the trend toward liberalization bode well for the future of a long neglected market

BRIAN D. SIMMONS

INNOVATIVE developments in telecommunications most frequently relate to providing systems to meet the complex requirements of large businesses, characterized by the needs of multi-national corporations, the oil and gas industries, and large company groups. Small business needs are rarely either addressed or aided by the winds of change sweeping through communications. Yet, in reality, small business users represent by far the largest group of users, and are a healthy market that should not be ignored.

This situation applies in almost all European countries, but it is particularly applicable in some, such as the United Kingdom.

What are some of the developments which are influencing the situation now that the marriage between computers and telecommunications is really beginning to happen for the benefit of the hundreds of thousands of small businesses throughout Europe?

One significant feature of the telecommunications deregulation program underway in the United Kingdom has been the number of small businesses starting to market an innovative range of small electronic telecommunication systems to replace the often cumbersome and antiquated telephones, switching systems and telex machines currently in use. These companies are competing effectively with British Telecom (BT). Although BT holds the major market share of new systems—its successful Monarch private automatic branch exchange (PABX) has already sold more than 10,000 units—it is beginning to experience significant inroads in its traditional business lines.

The small PABXs, key systems and telex interface units and processor controlled telex terminals now available from the private sector are of particular interest to small businesses. There is tremendous scope for upgrading the installed base of small business systems.

In the U.K., there are a total of 1.8 million businesses, of which 85% are in the small business sector. Most telephone systems in this sector have fewer than four exchange lines. Out of the nation's 30 million lines, of which 20 million are in the private residential sector, only 10% are used by small businesses. Yet the actual number of key systems and basic telephones, such as manager/secretary units, is more than 250,000 and there are 80,000 small PABXs.

Although not identical to the situation in the U.K., France, West Germany, Italy and most other European countries follow a similar pattern. Many of these systems are manual or pre-electronic, although over the last 3 years there has been an acceleration in the sales and rentals of replacement electronic systems.

There are fundamental differences between large and small companies in their needs and in the manner in which they organize themselves both to assess and to acquire new systems. Despite their small size and often modest requirements, small business telecommunication needs can be relatively complex and may require a good deal of investigation in order to arrive at an optimum solution. Yet, all too often, stock solutions are offered to service their needs. Each business has a unique

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Table 1
Small computers in Europe (end of 1983)

	Commercial	Special	Home	Total (millions)
France	21%	11%	68%	0.53
West Germany	35%	20%	45%	0.48
Italy	26%	14%	60%	0.20
U.K.	8%	7%	85%	2.48

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set of requirements that should be addressed if disappointments are to be avoided when systems are in service.

How do the typical requirements of both large and small businesses compare?

Large business

Large businesses deal largely in volume communication requirements. These usually comprise large sophisticated PABXs, voice networks, message-switching telex centers and data networks linking terminals and microcomputers with minicomputers and mainframe computers. In addition, there are often specialized needs, such as facsimile, electronic mail, mobile radio, teleconferencing or videoconferencing, and possibly voice messaging. Increasingly, network management and call-cost control systems bring new methods to the way in which communications services are planned, implemented, operated and controlled. All this calls for an increasing budget, making communications one of the largest corporate costs. It also necessitates a qualified telecommunications manager, sometimes supported by a team of specialized staff, to operate the total service and to interface with the other highly important data processing and information technology groups within an organization.

Telecommunication managers will often be active in users' groups. In the U.K., for example, there is the Telecommunications Managers Assn. (TMA), which has 450 members drawn from the majority of the most important companies. Elsewhere in Europe, other user groups are being formed, many affiliated with the International Telecommunications Users' Group (INTUG).

The value of users' groups, both to represent users' interests and to educate and inform members, has been of particular benefit in the U.K. where fast moving legislative measures, changing environment and rapid market movements have put extra pressure on users to keep abreast with the details and the consequences of all that is taking place.

The small business sector bears little similarity to the large business sector. User awareness of what is available and how to plan for the future is generally not as great in the small business sector, although in some businesses there is now considerable management interest. Decisions on what to acquire, and on long term planning, are often either the domain of a lively director or one of the 101 tasks of an overworked and harrassed office manager.

For the most part, requirements are basic: a telephone system or just one or two ordinary telephones, possibly a telex terminal or a facsimile machine, a telephone answering machine and perhaps a wide area paging device. Many small businesses, however, have only a telephone service.

The conservative tendency is to use only the products of the national telecommunications administration (PTT) rather than to branch out into private systems, although this generalization depends very much on the country concerned, and on the policy prevailing for private supply and maintenance of apparatus, in addition to the PTT's offerings.

'The small business sector bears little similarity to the large business sector. User awareness . . . is generally not as great in the small business sector. . . .'

Future needs

Perhaps it is inappropriate to look only at the traditional situation, because big changes are occurring in the way small businesses use technology. If, therefore, a scenario about what is likely to be required in 3 to 5 years is developed, the vista opens up considerably. The microcomputer—already installed in considerable numbers in many small businesses to perform accounts, ledger, stock control, appointments, calculations, filing, addressing and world processing—also will be used as a communications facility. The range of applications which will emerge include: telex, electronic mail, viewdata, videotex, teletex, database access and software downloading.

In addition, with suitable programs, there will be further applications in electronic directory services, telephone call logging and cost control, and traffic monitoring. This range of uses should be well within the capability of the more intelligent personal computers now available.

Convergence

It is informative to compare the sizes of the small business computer and telecommunications markets in the European Economic Community (EEC) countries. The four largest countries are France, West Germany, Italy and the U.K.

The rate at which small computers, suitable for use by small businesses and at home, are being installed in Europe is staggering. For example, during 1983 60,000 IBM Personal Computers were sold and, by the end of 1984, well over 200,000 were expected to be in service. This phenominal growth is expected to increase. The total number of small computers which cost less than $5000 installed in these four countries reached 3.5 million by the end of 1983 and is now likely to be as high as 5 million with the major share being installed in the U.K. (Table 1).

As these computers are connected to telephone lines, the number of computer-based telecommunication transactions which take place will grow enormously. The high rate of penetration of telephone lines to almost all businesses and to many homes will mean that telematic ser-

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Table 2

Small PABXs and key systems in Europe

	PABXs (as many as 30 lines)	Key systems (all types)
France	60,000	470,000
West Germany	90,000	260,000
Italy	45,000	510,000
U.K.	80,000	280,000

vices can come into vogue at little extra cost, because the installation of a central office line has already been achieved. The prospect of considerably increased business from the domestic sector should generate extra revenues for the PTTs and network operators from what is traditionally a low call-volume market.

There are far fewer telephone switching systems than there are computers, but PBXs and key systems are generally more expensive and generate far more traffic and revenue. Indeed, it is confidently predicted by all telephone administrations that, despite the big increases expected in non-voice services in the future, telephone voice traffic will remain the biggest revenue earner. The estimated installed base of small PABXs with capacities of as many as 30 extension lines, along with key systems, is shown in Table 2.

It is also interesting to compare the employment characteristics in these countries to get some indication of where the principal number of small businesses may lie. Table 3 shows the total working population of each in 1981, and the percentages of persons employed in agriculture, industry and other occupations which mainly comprise the service sector. The U.K. has the greatest percentage of people employed in the service sector, which includes shops, agencies, garages, builders, solicitors, decorators, travel, restaurants, small garages, hotels and guest houses.

The liberalized telecommunications industry in the U.K. is gearing up to service this market. Already more than 30 small key systems and PABXs have undergone the stringent type approval tests to qualify for connection to the public switched network in competition with BT.

It is expected that the further growth of service industries, together with an expanded innovative electronics market, will stimulate the growth of small businesses both to provide and consume new products. As computers penetrate further into the home to satisfy basic business needs, as well as entertainment games and educational applications, it is probable that a new trend in data communications will emerge in which residential subscribers will choose to access local shops and mail order stores, banks, building societies, insurance offices, libraries and information services, using a range of terminals.

This development could well mark another step toward what is commonly referred to as the cottage industry era, but one in which only professional staff and home worker employment will probably have an impact.

The surge forward in information services also will widen the range of switching systems used. Automatic call distribution (ACD) systems will become increasingly popular; using ACD systems, a small group of persons will be able to service a large number of telephone callers on a programed basis, using complex computer-aided telephone terminals, for taking enquiries, orders and bookings. Likewise, almost the reverse of this process will occur in which a small team of persons, using sophisticated database telecommunication terminals, will be engaged in high performance telephone selling. Efficiency will be the key, and calls will be automatically generated according to a program for the day. As each call materializes, information pertinent to the called person or business will be shown on a visual display unit. This information should include type of business, product or service interest, last order data and payments outstanding. This method of telephone selling can save time spent hunting through correspondence and files, and should increase productivity substantially.

Small business functions of this type should increase with the combined facility of stored program control telephone systems and personal computers.

The integrated digital services network (ISDN) increasingly interests big users, many of which are in an advanced stage of planning their applications to use the ISDN when it becomes available. The prospect of being able to communicate using the main services of voice, data, text and image over a single 144 kilobit per second (kb/s) access line will be attractive. Such a service will offer coincident transmission of several communication services.

However, the ISDN also will pose a number of problems for small businesses and adequate solutions will be required. For example:

- It may not be good strategy to put all services over one facility in the possible event of its failure.
- Present techniques for local ISDN access limit line length to about 4 kilometers and many small businesses are in remote locations.
- Most small businesses operate call connect systems and data services which use analog devices which are not directly compatible with the ISDN.
- ISDN is more cost effective for large PABX users via 2 megabit per second multichannel links than for small business users requiring only single lines.

Nevertheless, as more cost effective digital terminals are developed, a growing number of small businesses will migrate to digital operation and reap the benefits of the ISDN. In the event of line outages, wideband cellular radio digital links possibly could provide emergency service for a user until the wired link can be restored.

Most European countries now have advanced plans for the ISDN and, by the late 1980s, they should be bringing these into widespread opera-

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Table 3
Employed population

	Agriculture	Industry	Other	Total population (in millions)
France	3.5%	14.0%	22.0%	54
West Germany	2.0%	18.0%	21.1%	62
Italy	4.7%	13.5%	17.5%	57
U.K.	1.0%	15.0%	26.0%	56

'. . . it will be necessary for industry and PTTs to increase the . . . awareness of their potential users. . . .'

tion. On the assumption that in the future there could be a much greater number of residential customers who use communications services to contact small businesses for tele-enquiry, tele-shopping and similar services, there could be a big increase in the volume of generated traffic. If ISDN service can be cost effectively used by residential subscribers, who form by far the largest single user group, although at present they are a very low traffic volume group, there could be a great surge in demand and revenue from these applications.

Alarm and security services are increasingly required by small businesses and homes. The ISDN can offer particularly secure service, as well as the prospect of slow-scan full 625 line TV screen quality. A 64 kb/s channel will enable screen replenishment at 4 second time intervals, which is adequate for most closed-circuit television services.

The low visibility which small business telecommunications generally has belies the true extent of this important market and its needs. Every small business has a unique set of communication requirements which must be satisfied effectively in order to achieve the best possible price-performance relationship.

However, the arrival of the low cost computer and an exciting portfolio of microprocessor controlled telecommunications terminals is dramatically altering this situation, particularly in the U.K., where deregulation is increasing the range of new systems on the market and the awareness of BT about the needs of the small business.

To continue this penetration, however, it will be necessary for industry and the PTTs to increase the education and awareness of their potential users, particularly people who still use old technology equipment to conduct their businesses. Similarly, users must be prepared to set aside time to discover what is available, and to plan more effectively for their future telecommunication requirements. All too often, the pressures of modern business mean that only a small proportion of business managers devote time to this task or belong to user groups which represent their business needs.

Failure to keep abreast of developments may jeopardize the essential expertise necessary to stay ahead in an increasingly competitive buisness world. □

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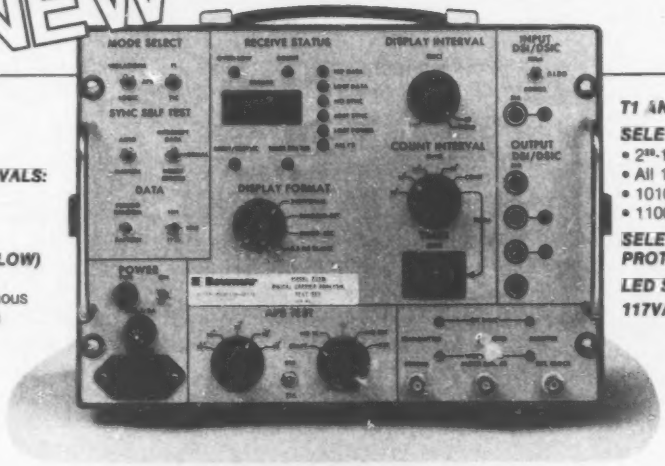

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